APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,721	10/31/2003	Philip J. Pietraski	1-2-0433.1US	1573

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/698,721	PIETRASKI, PHILIP J.
	Examiner	Art Unit	
	Dung Lam	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-5,12-16 and 32-36* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) *1-5,12-16 and 32-36* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim(s) 1, 12 and 32 are rejected under 35 U.S.C. 102(e) being anticipated by

admitted prior art.

3. Referring to claim **1**, admitted prior art of applicant teaches a method for

providing feedback regarding the quality of a communication channel which is

transmitted between a transmitter and a receiver ([0008 – 0010]); the method

comprising: transmitting a control communication from said transmitter to said receiver

([0008], Step 102 Fig. 1), said control communication including information regarding

the allocation of resources in a subsequent downlink data communication ([0008], Step

102 Fig. 1); receiving at said receiver said control communication and awaiting said

downlink data communication ([0008], Step 104 Fig. 1); transmitting from said

transmitter said downlink data communication over a downlink channel ([0009], Step

106 Fig. 1); receiving at said receiver said downlink data communication (Step 108 Fig.

1 ,[0009]); performing at said receiver at least one current quality measurement on said

downlink data communication to determine the current quality of said downlink data

channel ([0009], Step 110 Fig. 1); deriving, based on said performing step, a predictive

channel quality indication (CQI) estimating the future quality of said downlink data

channel (Using the measurements from step 110, the UE derives a CQI (step 112) that

it *estimates would provide the highest throughput* [0009]);   and transmitting said

predictive CQI from said receiver to said transmitter wherein said predictive CQI

includes at least one of a recommended transport block size, modulation format, or

number of codes ("the CQI could represent a recommended Transport Block Size,

modulation format, number of codes", [0005 and 0010]).

4.   Referring to claim 12, admitted prior art of applicant teaches a method for

providing channel quality measurements on a downlink communication channel

transmitted from a receiver to a transmitter (0008 - 0010); the method comprising:

monitoring said downlink communication channel at said receiver (0009); performing at

least one current measurement on said downlink communication channel to determine

the current quality of said downlink data channel ([0009], Step 110 Fig. 1); deriving,

based on said performing step, a predictive channel quality indication (CQI) estimating

the future quality of said downlink data channel (Using the measurements from step

110, the UE derives a CQI (step 112) that it *estimates would provide the highest*

throughput [0009]);   and transmitting said predictive CQI from said receiver to said

transmitter wherein said predictive CQI includes at least one of a recommended

transport block size, modulation format, or number of codes ("the CQI could represent a

recommended Transport Block Size, modulation format, number of codes", [0005 and

0010]).

5.   Referring to claim 32, admitted prior art of applicant teaches a method for

providing feedback regarding the quality of a communication channel which is

transmitted between a transmitter and a receiver (0008 - 0010); the method comprising:

transmitting a control communication from said transmitter to said receiver (0008), said

control communication including information regarding the allocation of resources in a

subsequent downlink data communication (0008); receiving at said receiver said control

communication and awaiting said downlink data communication (([0008], Step 104 Fig.

1)); transmitting from said transmitter said downlink data communication over a

downlink data channel (0009); receiving at said receiver said downlink data

communication (0009); transmitting from said transmitter a pilot channel communication

over a pilot channel (0012); receiving at said receiver said pilot channel communication

(0012); performing at said receiver at least one current quality measurement on said

downlink data communication and said pilot channel communication to determine the

current quality of said downlink data channel (0012); deriving, based on said performing

step, a predictive channel quality indication (CQI) estimating the future quality of said

downlink data channel (Using the measurements from step 110, the UE derives a CQI

(step 112) that it *estimates* **would** *provide the highest throughput* [0009]);   and

transmitting said predictive CQI from said receiver to said transmitter wherein said

predictive CQI includes at least one of a recommended transport block size, modulation

format, or number of codes ("the CQI could represent a recommended Transport Block

Size, modulation format, number of codes", [0005 and 0010]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims **2-3, 13-14 and 33-34** are rejected under 35 USC 103(a) as being

unpatentable over admitted prior art of applicant and **Bergel** (U.S. Publication No.

2004/0142698).

7.   Referring to claims 2, 13 and 33, admitted prior art does not explicitly teach

including storing said at least one current quality measurement (0026 and Figure 4B).

In an analogous art, **Bergel** teaches the step of storing at least one current quality

measurement (S120, [0048, 0049] and Figure 4B). Therefore, it would have been

obvious for one of ordinary skill in the art skill in the art at the time of the invention was

made to combine the admitted prior art's teaching of deriving a predictive CQI with

Bergel's teaching of storing at least one current quality measurement to compare the

past and present values to provide a more accurate estimate value.

8.   Referring to claims **3, 14 and 34**, admitted prior art of applicant further teaches

the method of claims 1/12/32 respectively but does not explicitly teach the step of

retrieving a stored measurement in deriving the predictive CQI. In an analogous art,

Bergel said deriving step further includes retrieving at least one stored quality

measurement and utilizing said at least one stored quality measurement and said at

least one current quality measurement to derive said predictive CQI (S120, [0048, 0049]

and Figure 4B). Therefore, it would have been obvious for one of ordinary skill in the art

skill in the art at the time of the invention was made to combine the admitted prior art's

teaching of deriving a predictive CQI with Bergel's teaching of deriving step predicts the

future quality of the downlink communication channel to provide an improved

compensation technique for transmission over a channel (0010).

9.   Claims 4, 15 and 35 are rejected under 35 USC 103(a) as being unpatentable

over admitted prior art of applicant and Bergel and further in view of **Koorapaty** et al.

(U.S. Patent Publication No. 2003/0129992).

10.   Referring to claims 4,15 and 35, admitted prior art of applicant and Bergel teach

the limitations of claims 4,15 and 35, but do not teach storing predicted values.

Koorapaty et al. teaches storing predicted values [0010]. Therefore at the time the

invention was made, it would have been obvious to a person of ordinary skill in the art to

combine the teaching of Koorapaty of storing predicted values to compare the predicted

values with the measured values ([0012]).

11.   Claims 5,16 and 36 are rejected under 35 USC 103(a) as being unpatentable

over admitted prior art of applicant in view of Bruckert et al. (U.S. Patent No. 5,305,468)

12.   Referring to claims 5, 16 and 36, admitted prior art of applicant teaches the

limitations of claims 5, 16 and 36, but do not teach wherein said deriving step utilizes a

linear predictive algorithm to derive the predicted value. In an analogous art, Bruckert et

al. teaches wherein said deriving step utilizes a linear predictive algorithm to derive the

predicted value (Column 4, Lines 42-45). Therefore, it would have been obvious for one

of ordinary skill in the art at the to combine the teaching of admitted prior art of applicant

with the teaching of Bruckert et al. wherein said deriving step utilizes a linear predictive

algorithm to derive the predicted value to provide a more accurate power control

command (Column 1, Lines 47-49).

Response to Arguments

Applicant's arguments filed 5/29/07 have been fully considered but they are not
persuasive.

Applicant argues that, "As stated, the present invention derives a predictive
channel quality indication, which estimates future quality of the downlink data channel,
an element that is not suggested or taught by the prior art set forth in Applicant's
background section."

The examiner respectfully disagrees. Paragraph 9 of the Background of the
Invention recites,

> [0009] The Node B sends the associated DL data transmission (step 106). The UE reads the DL
> data transmission (step 108) and makes selective quality measurements (step 110). Using the
> measurements from step 110, the UE derives a CQI (step 112) that it **estimates *would*** provide
> the highest throughput, while still meeting other possibly specified requirements, such as a block
> error rate (BLER).

> [0010] The UE then reports the most recently derived CQI to the Node B in the next available UL
> control channel (step 114). The Node B receives the CQI (step 116) and then uses the CQI to set
> the transmission parameters for the next data transmission (step 118).

By definition, the word "would" is used to express a sense of "will" or an event that may happen in the future (see Encarta dictionary). Thus the word "would" implies a prediction of event, which may happen in the future.

Therefore, the above underlined phrase can be interpreted as "the derived CQI value that is estimated and predicted to provide the highest throughput". Since a throughput is an indicator of a channel quality ([0009]), the admitted prior art clearly teaches a predictive channel quality.

This recently derived CQI value, which has a predicted highest throughput, is then sent to the transmitter Node B (see [0010]).

Thus, paragraphs 9 and 10 of the Background of Invention of the admitted prior art clearly teaches the alleged missing limitations of "deriving a predictive channel quality indication, estimating the future quality of the downlink channel and transmitting the predictive CQI from the receiver to the transmitter."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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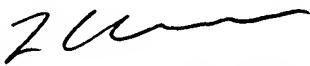
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